North Carolina Department of Health and Human Services
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December 21, 2011 **(2 pages)**

To: All North Carolina Health Care Providers
From: Megan Davies, MD, State Epidemiologist
Re: **Human infections with a novel influenza virus**

This memo is intended to provide information to North Carolina clinicians regarding recent human infections with a novel influenza A virus. Although this virus has not been identified in North Carolina, clinicians should consider this information when evaluating patients with influenza-like illness.

Summary

Since July 2011, eleven human infections with a novel influenza A (H3N2) virus have been identified among residents of five states: IN, PA, ME, IA and WV. This is a swine-origin triple reassortant H3N2 virus. It is similar to viruses that have been circulating among pigs since the 1990s, except that it contains the matrix (M) gene from the 2009 H1N1 virus. Investigation of other potential cases is ongoing.

Clinical and Epidemiologic Features

- Only 6 of the 11 confirmed cases had direct or indirect exposure to pigs, suggesting some human-to-human transmission.
- Ten of eleven cases have occurred in young children, with a median age of 3 years.
- The incubation period and severity appear generally similar to seasonal flu. Most infections were mild. Three persons were hospitalized, but all three had underlying conditions.

Vaccination and Immunity

- This virus is not included in the 2011–12 flu vaccine.
- Preliminary serologic testing at CDC suggests that some older children and adults have preexisting immunity to this virus, likely due to past exposure to or vaccination against previously-circulating human H3N2 viruses. No preexisting immunity was found among children less than 10 years of age.
- Vaccination with the 2011–12 flu vaccine will likely provide some cross-protective immunity for older children and adults. Vaccination with the 2011–12 flu vaccine is unlikely to provide protection against this virus for children less than 10 years of age.
- CDC has identified a seed virus for producing a vaccine against this virus. Triggers for starting production have not yet been established.

Antiviral Susceptibility

- This virus is susceptible to neuraminidase inhibitors (oseltamivir and zanamivir) and resistant to adamantanes (amantidine and rimantidine), similar to other currently-circulating strains.

Laboratory Identification

- Anecdotal evidence suggests that this virus can be detected by some rapid tests. However, these tests will not differentiate this virus from seasonal influenza A viruses. The sensitivity and specificity of rapid tests for detection of this virus are not known.
    - As a reminder, a negative rapid test does NOT rule out influenza infection and should not be used as a basis for treatment or infection control decisions during periods when influenza is known to be circulating.

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- The ability to detect and identify this virus using other influenza diagnostic tests may vary depending on the assay used.
- All state public health laboratories are able to detect this virus using current PCR assays.
- Influenza testing at the North Carolina State Laboratory of Public Health (SLPH) is primarily intended for virologic surveillance, rather than diagnostic purposes.
  - Testing at SLPH will continue to focus on a sample of patients with influenza-like illness seen at facilities participating in the Influenza-Like Illness Network (ILINet).
  - Testing at SLPH can also be considered in other situations if the local health department determines that such testing is necessary for surveillance or to determine which control measures are needed. Examples include outbreaks in institutional settings and clusters of severe or unusual respiratory illness. Local health department approval is REQUIRED for testing at SLPH, with the exception of specimens submitted from ILINet providers.

Recommendations

- Continue to encourage vaccination with the 2011–12 flu vaccine for all persons ≥6 months of age.
  - Vaccination remains the best way to prevent infection with currently circulating strains.
  - Although the current vaccine is unlikely to provide protection against this novel virus for young children, it might provide some protection for older children and adults.
- Antiviral treatment with oseltamivir or zanamivir is still recommended for all persons with suspected or confirmed influenza who have any of the following (regardless of vaccination status):
  - Illness requiring hospitalization;
  - Progressive, severe, or complicated illness, regardless of previous health status; or
  - Increased risk for severe disease (e.g. persons with certain chronic medical conditions, persons 65 or older, children younger than 2 years, and pregnant women).

  Antiviral treatment can also be considered in other situations if it can be initiated within 48 hours of illness onset.
- Please contact your local health department to report any outbreaks of influenza-like illness (i.e. fever plus cough or sore throat), particularly among young children.

It is not yet clear whether this novel virus will continue to spread during the coming months. In the meantime, the NC Division of Public Health is taking steps to increase virologic surveillance. We will post updates with additional guidance if warranted on www.flu.nc.gov, along with general information and weekly surveillance reports. Additional information and guidance from CDC is available at www.cdc.gov/flu/swineflu.